RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER 2871

Attorney Docket No. **09792909-5865** PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Group Art Unit: **2871**
	)	
Tomonori Tsukagoshi, et al.	)	Examiner: **Lucy P. Chien**
	)	
Application No. **10/823,265**	)	Confirmation No.: **5347**
	)	
Filed: **April 13, 2004**	)	
	)	
For: LIQUID CRYSTAL DISPLAY DEVICE AND IMAGE DISPLAY APPARATUS	)	

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT AFTER FINAL

Dear Sir:

Pursuant to 37 C.F.R. § 1.116, this Amendment is submitted in response to the Final Office Action mailed May 26, 2006. Applicant respectfully requests amendment of the application, and reconsideration and allowance of the pending claims.

IN THE CLAIMS

The following claim listing replaces all prior claim listings:

1-5. (Cancelled).

6. (Withdrawn) The liquid crystal display device as claimed in claim 1, wherein the direction of projection of optical axis of the optical compensation layer to the liquid crystal panel surface is substantially parallel to at least one of the direction of projection of pre-tilt of liquid crystal molecules near a board surface on the luminous flux incidence side of the liquid crystal panel to the board surface and the direction of projection of pre-tilt of liquid crystal molecules near a board surface on the luminous flux emission side of the liquid crystal panel to the board surface.

7. (Withdrawn) The liquid crystal display device as claimed in claim 6, wherein when refractive index anisotropy of the inorganic material forming the optical compensation layer and refractive index of a liquid crystal layer of the liquid crystal panel have the same sign, the optical axis of the optical compensation layer and the optical axis of the liquid crystal layer are inclined in opposite directions with respect to the liquid crystal panel surface.

8. (Withdrawn) The liquid crystal display device as claimed in claim 6, wherein when refractive index anisotropy of the inorganic material forming the optical compensation layer and refractive index of a liquid crystal layer of the liquid crystal panel have different signs, the optical axis of the optical compensation layer and the optical axis of the liquid crystal layer are inclined in the same direction with respect to the liquid crystal panel surface.

9. (Withdrawn) The liquid crystal display device as claimed in claim 1, wherein the optical compensation layer is provided on both the luminous flux incidence side and the luminous flux emission side of the liquid crystal panel, and

the direction of projection of optical axis of the optical compensation layers to the liquid crystal panel surface is substantially parallel to the direction of projection of pre-tilt of liquid crystal molecules near a board surface on the luminous flux incidence side of the liquid crystal panel to the board surface and the direction of projection of pre-tilt of liquid crystal molecules near a board surface on the luminous flux emission side of the liquid crystal panel to the board surface.

10. (Cancelled).

11. (Withdrawn) The liquid crystal display device as claimed in claim 1, wherein the optical compensation layer is provided on a dustproof glass provided on the surface of the liquid crystal panel.

12. (Withdrawn) The liquid crystal display device as claimed in claim 1, wherein the optical compensation layer is provided on a cover glass of the microlens array.

13-23. (Cancelled)

24. (Withdrawn) The image display apparatus as claimed in claim 14, wherein the optical compensation layer of the liquid crystal display device is provided on a dustproof glass provided on the surface of the liquid crystal panel.

25. (Withdrawn) The image display apparatus as claimed in claim 14, wherein the optical compensation layer of the liquid crystal display device is provided on a cover glass of the microlens array.

26. (Withdrawn) An image display apparatus comprising:

a light source;

a liquid crystal display device having a microlens array provided on a luminous flux incidence side as a spatial light modulator;

an illuminating optical system for guiding a luminous flux emitted from a light source to the liquid crystal display device and thus illuminating the liquid crystal display device; and

an image-forming lens for forming an image of the liquid crystal display device;

the liquid crystal display device having two optical compensation layers made of an inorganic material and having an optical axis inclined with respect to a liquid crystal panel surface, on a luminous flux incidence side of the liquid crystal panel.

27. (Currently Amended) A liquid crystal display device ~~having a microlens provided on a luminous flux incidence side~~ comprising:

a microlens provided on a luminous flux incidence side of the liquid crystal display device;

a liquid crystal panel;

a first optical compensation layer and a second optical compensation layer, each of the first and second optical compensation layers being made of an inorganic material and having an optical axis inclined with respect to a surface of the liquid crystal panel ~~surface~~, at least one of the first and second optical compensation layers being positioned on the luminous flux incidence side of the liquid crystal panel.

28. (Previously Presented) The liquid crystal display device of claim 27, wherein the first and second optical compensation layers are positioned on the luminous flux incidence side

of the liquid crystal panel.

29. (Previously Presented) The liquid crystal display device of claim 27, wherein the inorganic material forming the first optical compensation layer is uniaxial crystal.

30. (Previously Presented) The liquid crystal display device of claim 29, wherein $\Delta n*d$, which is the product of refractive index anisotropy Δ and thickness d of the inorganic material forming the first optical compensation layer, is 640 nm or less.

31. (Previously Presented) The liquid crystal display device of claim 27, wherein the inorganic material forming the first optical compensation layer is crystal or sapphire.

32. (Previously Presented) The liquid crystal display device of claim 31, wherein $\Delta n*d$, which is the product of refractive index anisotropy Δ and thickness d of the inorganic material forming the first optical compensation layer, is 640 nm or less.

33. (Withdrawn) The liquid crystal display device of claim 27, wherein when refractive index anisotropy of the inorganic material forming the first optical compensation layer of the liquid crystal display device and refractive index of a liquid crystal layer of the liquid crystal panel have the same sign, the optical axis of the first optical compensation layer and the optical axis of the liquid crystal layer are inclined in opposite directions with respect to the liquid crystal panel surface.

34. (Withdrawn) The liquid crystal display device of claim 27, wherein when refractive index anisotropy of the inorganic material forming the second optical compensation layer of the liquid crystal display device and refractive index of a liquid crystal layer of the liquid crystal panel have different signs, the optical axis of the second optical compensation layer and the optical axis of the liquid crystal layer are inclined in the same direction with respect to the

liquid crystal panel surface.

35. (Withdrawn) The liquid crystal display device of claim 27, wherein the direction of projection of optical axis of the first and optical compensation layers to the liquid crystal panel surface is substantially parallel to the direction of projection of pre-tilt of liquid crystal molecules near a board surface on the luminous flux incidence side of the liquid crystal panel to the board surface and the direction of projection of pre-tilt of liquid crystal molecules near a board surface on the luminous flux emission side of the liquid crystal panel to the board surface.

36. (Withdrawn) The liquid crystal display device of claim 27, wherein the first and second optical compensation layers are formed on surface of a dust-proof glass on the luminous flux incidence side of the liquid crystal panel.

37. (Withdrawn) The liquid crystal display device of claim 27, wherein the first and second optical compensation layers are as a cover of a microlens array.

38. (Previously Presented) The liquid crystal display device of claim 27, wherein the angle of inclination of at least one of the first and second optical compensation layers is approximately 75° to 85°.

39. (Previously Presented) The liquid crystal display device of claim 38, wherein the angle of inclination of at least one of the first and second optical compensation layers is approximately 80°.

40. (Previously Presented) The image display apparatus as claimed in claim 27, wherein at least one of the first and second optical compensation layers has an outer size equal to or larger than an effective display area of the liquid crystal panel.

41. (Currently Amended) An image display apparatus comprising:

a light source;

a liquid crystal display device having a microlens array provided on a luminous flux incidence side as a spatial light modulator;

an illuminating optical system for guiding a luminous flux emitted from a light source to the liquid crystal display device and thus illuminating the liquid crystal display device; and

an image-forming lens for forming an image of the liquid crystal display device;

the liquid crystal display device ~~having~~ including a liquid crystal panel, a first optical compensation layer and a second optical compensation layer, each of the first and second optical compensation layers being made of an inorganic material and having an optical axis inclined with respect to a surface of the liquid crystal panel ~~surface~~, at least one of the first and second optical compensation layers being positioned on the luminous flux incidence side of the liquid crystal panel.

42. (Previously Presented) The image display apparatus of claim 41, wherein the first and second optical compensation layers are positioned on the luminous flux incidence side of the liquid crystal panel.

43. (Previously Presented) The image display apparatus of claim 41, wherein $\Delta n*d$, which is the product of refractive index anisotropy Δ and thickness d of the inorganic material forming the first optical compensation layer, is 640 nm or less.

44. (Withdrawn) The image display apparatus of claim 41, wherein the first and second optical compensation layers are formed on surface of a dust-proof glass on the luminous flux incidence side of the liquid crystal panel.

45. (Withdrawn) The image display apparatus of claim 41, wherein the first and

second optical compensation layers are as a cover of a microlens array.

46. (Previously Presented) The image display apparatus of claim 41, wherein the angle of inclination of at least one of the first and second optical compensation layers is approximately 75° to 85°.

REMARKS

Claims 1-46 were pending in the above-identified application. Claims 1-5, 10, and 13-23 were previously cancelled and claims 6-9, 11-12, and 24-26 were previously withdrawn from consideration. In the amendment mailed on March 21, 2006, the Applicants presented new claims 27-46.

In the May 26, 2006 Office Action, the Examiner asserted that claims 33-37, 44, and 45 were directed to a non-elected invention and only claims 27-32, 39-43, and 46 would be considered for examination. In the Office Action, claims 27-32, 38-43 and 46 were rejected.

With this Amendment, claims 1 and 41 were amended to correct for grammar informalities only and not to further distinguish Applicants' claimed invention over the cited prior art. Accordingly, claims 27-32, 38-43 and 46 remain at issue. However, the Applicants reserve the right to include the withdrawn claims in the present application should a linking claim, such as independent claims 27 and 41 be allowed.

I. Double Patenting Rejection of Claims

Claims 27-32, 40 and 41 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of co-pending Application No. 11/293,015. In response to this objection, Applicants are submitting a "Terminal Disclaimer." Accordingly, Applicants respectfully request withdrawal of this rejection.

II. 35 U.S.C. § 102 Anticipation Rejection of Claims And 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 27-29, 31, 40-43 were rejected under 35 U.S.C. § 102(b) as being purportedly anticipated by *Suzuki et al.* (U.S. Publication No. 20020018162). Claims 30, 32 and 43 were rejected under 35 U.S.C. § 103(a) as being purportedly unpatentable over *Suzuki* in view of *Nishida et al.* (U.S. Patent No. 6052168). Applicant respectfully traverses this rejection.

With respect to independent claim 27, Applicants claim a liquid crystal display device having the following limitations, among others: "a first optical compensation layer and a second optical compensation layer, each of the first and second optical compensation layers being made of an inorganic material and having an optical axis inclined with respect to a surface of the liquid crystal panel, at least one of the first and second optical compensation layers being positioned on the luminous flux incidence side of the liquid crystal panel." Independent claim 41 recites similar limitations.

In the last amendment mailed on March 21, 2006, Applicants argued that neither *Suzuki* nor any of the other cited prior art discloses these limitations. However, the Examiner did not address Applicants' arguments. In particular, Applicants noted that *Suzuki* discloses two optical compensators (233, 234) positioned on the luminous flux emission side of a liquid crystal display panel (232). However, while *Suzuki* mentions that the positions of the optical compensators were not limited to the specific embodiment in Fig. 21, *Suzuki* requires that both optical compensators remain on the emission side of the liquid crystal display panel. Specifically, *Suzuki* states that "the optical compensator 234 can be located at any position so long as the optical compensator 234 is located between the liquid crystal panel 232 and the exit side

polarizer 235." (See Par. [0191]). Thus, *Suzuki* actually teaches away from the invention recited in claims 27 and 41, which require "at least one of the first and second optical compensation layers [to be] positioned on the luminous flux incidence side of the liquid crystal panel."

The Examiner asserts that the liquid crystal display device disclosed by *Suzuki* has two optical compensators (233, 234), but does not rebut Applicants' argument that *Suzuki* actually teaches away from the invention recited in claims 27 and 41, which require "at least one of the first and second optical compensation layers [to be] positioned on the luminous flux incidence side of the liquid crystal panel."

Accordingly, Applicants maintain that *Suzuki* (alone or in combination with any of the other cited references) fails to teach or suggest all the limitations of claims 27 and 41 and respectfully requests that the rejection to these claims be withdrawn.

Claims 28-32, 38-40, 42-43 and 46 depend directly or indirectly from claims 27 or 41 and, thus, should be deemed allowable for at least the same reasons as claims 27 and 41.

III. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect. The Commissioner is hereby authorized to charge the extension fee and any additional fees which may be required, or to credit any overpayment to Account No. 19-3140.

Respectfully submitted,

Dated: September 21, 2006

By: _____/Thomas J. Burton/_____

Thomas J. Burton
Registration No. 47,464
SONNENSCHEIN NATH & ROSENTHAL LLP
P.O. Box 061080
Wacker Drive Station, Sears Tower
Chicago, Illinois 60606-1080
(312) 876-8000